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ABSTRACT

Problems in implementing educational change due to different perspectives and statuses of policy makers, practitioners, and researchers has contributed to an absence of shared paradigms. Combined with the intense demand for educational change, a system gridlock has ensued. Research of the last 2 decades on implementation of change is summarized in this paper, which proposes a new approach for the educational change process of the 1990s. The following issues are discussed: redefining and clarifying the concept of innovation; using "hyper-innovations"; creating conditions supportive of innovation; setting middle-level guiding parameters; recognizing participants' different constructions of meaning; reducing system overload; allowing time for institutionalization of change; and sharing information. Guidelines for implementation of change strategies include deregulation, outcome-oriented policy goals, development of multivariate approaches, equal support for implementation, use of a large-scale perspective, and development of trust. In summary, educational innovation depends on cooperation and collaboration and the use of a holistic, systemic approach. Four figures are included. (26 references) (LMI)

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The Local Educational Change Process and Policy Implementation

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One of the largest perenr l gaps in understanding and areas of misinterpretation is that between "policy makers" and "practitioners". Unfortunately this gap in perspectives, semantics, and scope is not only true of the "doers" in policy and practice, it also is characteristic of the researchers of policy and practice. The gap has been maintained over the last 20-30 years while the interrelationships between the policy and practitioner players has become increasingly intertwined, as a result of the greatly enhanced involvement of federal and state policy in education.

At this time, it is even more difficult to talk about policy and practice in the same breath, due to the many paradigms that can be used. Depending upon the paradigm selected, one's assumptions, perspectives, values and language shift. When two or more actors attempt to communicate using different paradigms, there is a concomitant increase in difficulty in being understood. Some of the paradigm options include:

- policy/practice
- development/implementation
- behavioral/constructivist
- large scale/small scale
- process/product
- organizational development/concerns-based
- intervention/innovation
- change agent/change facilitator

This list represents a communication problem also, it signifies the tremendous increase in wealth of understanding, and array of conceptual and technical resources now available for use in understanding the dynamics of a social system.

Paper presented at the annual meeting of the American Educational Research Association, Chicago, April, 1991

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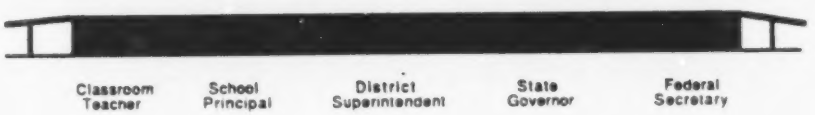
In this time of cognitive psychology, perhaps a metaphor will be helpful to illustrate the array of semantic, conceptual and perspective opportunities (as well as sources of confusion). One useful metaphor is that of a tunnel. The traditional use of this metaphor is in terms of "light at the end of the tunnel." A related use of this metaphor in my own work has been to equate looking through the tunnel to looking down a railroad track. As one looks down the railroad track, two rails appear to converge to a point. By combining the images of how things at a greater distance appear to merge with the idea of a tunnel, one way of explaining policy-practice perspective differences is possible. This metaphor is pictured in Figure 1. The various educational system actors are placed on a continuum from policy to practice. Each actor has the opportunity to look along the tunnel to other positions in the system.

I believe that one of our most serious problems in education today is the overly simplistic view that various role groups have of actors at others points along the Policy-Practice Tunnel. Thus, it appears that policy makers see the life and work of teachers as straight forward and relatively simple. There is a failure to recognize or accept the complexities of life in the classroom. At the same time, teachers, at their end of the tunnel, see their world as extremely complex and they have little empathy for what they perceive to be the simple life of policy makers, who keep announcing "simplistic" solutions. I'll return to this tunnel metaphor at the end of the paper. At the outset I am suggesting that we have a perspective problem, between policy and practice, that is affecting the ability of the educational system to make meaningful change.

Another way to use the tunnel metaphor is to imagine the tunnel being a highway tunnel, with various types of vehicles rolling through. In this use of the metaphor, if each vehicle represents an educational innovation, or change, then one can envision an increasingly dense stream of traffic flowing through the tunnel. Further, the current dominant pattern is a flow from the policy end toward the practice end, with each vehicle carrying the newest solution/fix that the

policy makers have derived for practitioners to implement. At this point, I suggest that there is little real forward movement in the tunnel. The educational highway system is in a major traffic jam (i.e. gridlock).

Figure 1 Different Points of View



A parallel metaphor can be constructed with the use of arteries and the flow of blood in the human body. Each blood cell has been customized to provide nutrients to the various parts of the body. This metaphor becomes interesting when one thinks about all of the antibodies that are created to attack infections. In this metaphor, it is easy to raise the question, are the antibodies what the policy makers practice? Or, are they created by practitioners to neutralize those policy efforts?

Well enough about metaphors, and the different frames and perspectives that can be used to set the stage for a discussion of educational policy and implementation. Currently, multiple frames and perspectives are being applied. Clearly there are differences in frames of reference of policy makers and practitioners. I suggest that these differences in perspective, and status, also apply to those who are doing research on policy and research on implementation. The absence of shared paradigms, in combination with the intense needs for change has led to intense pressure from policy makers for schools to change, which has accumulated to the currrent condition of system gridlock. At the same time, the bombardment of practitioners in combination with the sense of low status has resulted in pragmatic and self protecting resistance to change. The reaction

of school based practitioners has been initial willingness to attempt change, followed by frustration at the failure of others to support their efforts. As a result, practitioners and policy makers push harder.

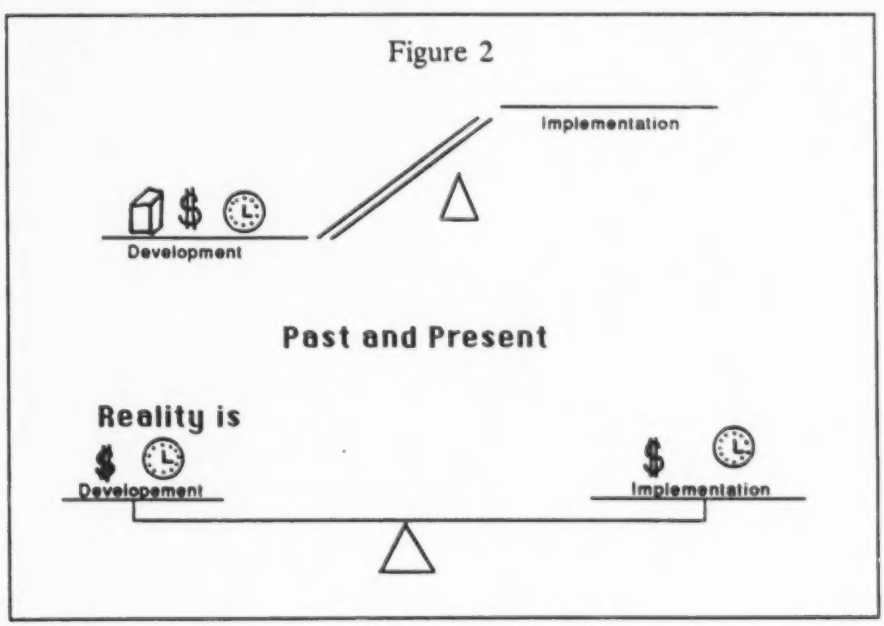
In all of this discussion, the central theme is change. During the last two decades, while education policy makers and school practitioners have become more active, researchers have made a number of important breakthrough's in understanding how change takes place. One of the major directions for research on change during this time has been to examine closely how implementation works in schools and classrooms. The purpose of this paper is to briefly summarize the major research studies of implementation during the 1970's and 1980's, and then to use selected findings from from those studies as the basis for proposing a number of issues and suggestions about how the educational change process should be approached in the 1990's.

The term change process has been deliberately selected here. One of the basic discoveries in the 1970's was that change is a process, not an event. To the best of my knowledge, this key assumption was first stated in 1973, by Hall, Wallace & Dossett, in the original concept paper for the Concerns Based Adoption Model (CBAM). However, as with many statements from theory and findings from research, this basic premis is often ignored. Much of the educational system still behaves as if change is an event; that change simply can be mandated with a time for accomplishment that is before the next election. Grudgingly, policy makers will provide some support for development, but little for dissemination, and nearly none to support implementation in individual schools and classrooms.

This is another important point to highlight during the introductory part of this paper. As will be summarized in the review of the major studies of the 70's and 80's, implementation has been a relatively recent discovery. What is still recognized by only a few is that implementation costs just as much (if not more) as development. The traditional view, as defined in policy and practice,

has been to place most all of the available resources (i.e., time, dollars and personnel) into the development of an innovation (Figure 2). Since the major announcement by researchers and theorists on change in the 1970's that there was an aspect of the change process called implementation, there has been limited acceptance of the need to support the implementation phase at the practitioner level. There are other aspects of this imbalance that could be pointed out, such as differences in the role of leadership for change during the development and implementation phases. However, the main point here is that implementation is an equally costly phase of the change process.

Figure 2



As this paper unfolds, the next section provides a brief summary and commentary about the major implementation studies that occured during the last 20 years. Following this is an extensive discussion of issues and implications of the studies for policy and practice, including suggestions for how to have successful change efforts in the 90's. The paper concludes with some related

speculations and suggestions for how policy, practice and research need to shift from a vertical top down paradigm, to a horizontal and more systemic approach for transforming the educational system. This approach will require trust and understanding of the roles and responsibilities of all participants in the system.

Key Studies of Implementation in the 1970's and 1980's

Prior to the 1970's, change was rarely if ever viewed as a process. The approaches to change in the earlier decades of this century, as well as the research on change, treated the phenomena as an event. In the classic studies, conducted by rural sociologists, of farmers adopting such innovations as hybrid corn seed and in the studies of technology transfer to third world countries, the event perspective was an implicit assumption. This event orientation is reflected in their terminology through the use of concepts such as adoption. Given the relative simplicity of the innovations being studied and that the "adoption decision" was most frequently done by an individual (i.e. farmer), it was easy for those earlier researchers to preserve this change-as-an-event assumption. Farmers either did or did not use hybrid corn seed. Physicians either did or did not shift from sulphur based medicines to antibiotics. Third world farmers either did or did not use steel tipped plows. Analyses of this classic research in such sources as, Communication of Innovations (Rogers and Shoemaker, 1971), illustrate that the event mentality was preserved throughout this rich research tradition. Ironically, even the early studies of change in schools by Mort (1953) and others tended to focus on "adoption" of educational innovations such as kindergartens and driver's education. My intent here is not in any way to diminish the merit of these earlier studies, instead my objective is to point out how difficult and slow has been the "change" in the thinking of the researchers in this field. For many reasons it has been easier to

view the creation and utilization of innovations as an event, rather than as a phenomenon that has a timeline and process.

A number of other areas of research and theory have made ancillary contributions to this glacial shift in perspective. For example, the human relations movement that emerged in the 50's and 60's, and especially the work on Organizational Development (OD) were key. The work of Schmuck & Miles (1971) represents an example and summary of this process orientation to change. In some ways the OD approach represented the equivalent of an anti-paradigm for change. Where the earlier research focused upon the innovation as a particular product or content, the Organizational Development community focused upon practitioners learning a set of generic process skills. Some of us in our writings referred to this as "innovation free". This was our way of pointing out that the OD approach represented a major shift in the type of change that was being asked for. The OD movement faded in the 70's and had little sustained implementation (Fullan, Miles & Taylor, 1981). I suspect this has been true in large part because OD was content free. It did not address the "concerns of school people", OD addressed the concerns of district administrators and OD consultants.

One of the other contributing approaches to bringing about change in schools was the national curriculum development movement of the 1960's. With major support from the National Science Foundation, a number of revolutionary curricula were developed in mathematics, science and in related fields during the 1960's. These were an attempt to update the content as well as the process of teaching content in the nations classrooms. Much of this effort has been reported as being in response to the launch of Sputnik in 1957, however, there were commissions and efforts underway prior to that time. Most notably was the early work to launch a new high school physics curriculum that had a national commission at work in 1956.

There are two interesting aspects of the national curriculum development movement of the 60's that continue to be a part of our thinking today, especially from the policy end. One theme was federal involvement in curriculum development. The second theme was multi-year funding of development projects, and in terms of todays levels of funding, large budgets were involved (many of these were multi-million dollar projects. An important related theme in these development efforts was the focus upon developing "teacher proof" curriculum. The intent of this objective was to develop curricula that would be so well refined and defined that teachers would not adapt or mutate the prescribed practices. In a somewhat ironical twist, these materials ended up being teacher proof in another way. There failed to be widespread "adoption" of these curricula, and the nation's science classes were affected very little (Stake and Easley, 1978). These national curriculum development projects forced the discovery of implementation. These projects represented extensive investment on the development side and a near complete denial of there being any need to address implementation at local sites. It was explicity assumed that after extensive and thorough curriculum development processes were completed, widespread use would follow automatically.

Thus the stage was set for the discovery and study of implementation in the 1970's. The decade began with the Rand Change Agent Study (1974-1978), which was established and funded as a policy study. However, due to the sensitivities of the researchers and the design of the study, they more or less got sucked in to an examination of implementation phenomena. The Rand Change Agent studies were of four federally funded programs that offered four different ways of temporarily funding local sites to create new local practices. A key concept out of the Rand Change Agent Study was the concept of "mutual adaptation". This concept suggested that in the "effective projects", a reason for success was that there was an adaptation of the innovation to fit the local setting and adaptations by the local users to fit the innovation.

As with most major studies, there are criticisms that can be raised (e.g. Datta, 1980), and in hindsight, a number of nuances that one could argue the investigators should have anticipated and understood. For example, the generalizations from this major study, as with a number of the other major studies, tend to go beyond the types of change projects that were being studied. In this case, the federal projects studied were designed to provide seed monies to the local level to create local process and product changes. However, the findings of the studies tend to get extrapolated to all types of changes, including those without extra seed money and those situations where innovations developed outside are being introduced at the local level. In general, extrapolations of this type are dangerous and that has proven to be the case with the Rand study. As McLaughlin (1990) pointed out in revisiting the Rand Change Agent Study, most of the basic findings hold. Yet there are areas where we now understand more and some of the extrapolations, as well as a few of the interpretations, need to be adjusted, given our greater current understanding of implementation.

A lesser known and remembered, but also important early policy study of implementation, was an evaluation project conducted by Emrick, Peterson and Agarwala-Rogers (1977) to analyze the effects of the early rounds of the National Diffusion Network (NDN). The National Diffusion Network (1980) has turned out to be probably the most important federal project to bring about change in individual classrooms. This effort uses the combination of a validation process to identify educational innovations, supports for dissemination of knowledge about the projects nationally and within each state, and each innovation having a designated representative to provide some support for initial implementation. The NDN was created at a time when even the researchers were just discovering some of these important linkages (e.g. Havelock, 1971). The Emrick, Peterson & Agarwala-Rogers study documented that the NDN system was successful in bringing outside innovations to inidividual classrooms.

Another national study, that dealt with implementation was launched in the late 1970's, the Dissemination Efforts Supporting School Improvement (DESSI)[1] study. This study had an implementation emphasis and looked at the NDN, as well as two other types of federal policy supported change efforts. The trends and findings in this study are mainly reaffirming of earlier studies and intuitively make sense. There has been little commentary and systematic criticism of this study, although it too tends to have findings that are extrapolations going beyond the study design and the types of data that were collected. For example, in this study, the majority of the innovations selected for study would be implemented by individual teachers, not schools as a whole. However, in their reports, the DESSI investigators offer a number of conclusions about the role of principals and draw implications for school-wide change efforts.

An important note about the Rand Change Agent Study, the Emrick, Peterson & Agarwala-Rogers study, and the DESSI study is that all three were supported by federal funds to study federal policy initiatives with the purpose of evaluating the efforts of those policies. In each case, the study design forced a look at the local level. In each case teachers and classroom practices were assessed to some extent. However, the amount of direct measurement of classroom practice was minimal, and the focus on individual schools as units was extremely limited in two of the studies. The need to sample for national "representativeness" worked against detailing individual schools and classrooms, as did the designs of the projects studied.

The other major set of studies of implementation began at the opposite end of the tunnel with the focus on individual teachers and classroom practice. This project was the multidisciplinary effort centered around development, initial verification and wide spread application of the Concerns Based Adoption Model (CBAM) (Hall, Wallace & Dossett, 1973; van den Berg and Vandenberghe,

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[1]Probably the best souce for more information about the DESSI study is the 1983 issue of Educational Leadership, 41(3).

1981; Hall & Hord, 1987). This team effort now is celebrating twenty years of concentrated study of the dynamics of the change process as it is experienced by individual teachers and schools as units. Three diagnostic dimensions, Stages of Concern, Levels of Use, and Innovation Configurations have offered ways to describe and document the change process from the perspective of the individual classroom and school staff as a whole. More recent research in this area has focused upon how the principal's "change facilitator style" affects teachers success in implementation. Where other researchers have ebbed and flowed in their involvement in studies of implementation, those involved with the CBAM work, both in the US and in other nations, have continued to conduct studies that have been systematically focused on the change process in schools. Thus at this time, they have an extensive data base and an array of research reports to undergird this approach to documenting and facilitating the change process, from initial conception of the innovation, through implementation, and on to institutionalization.

One of the key perspectives in the CBAM approach is that there must be an understanding of how the individuals within a school become confident and competent in using educational innovations. It is argued from the concerns-based perspective that a school has not changed until the individuals within it change, and that is done on an individual basis. For each individual, change is a developmental phenomenon, thus during the introduction, implementation and institutionalization phases, change facilitators must provide leadership (i.e. interventions) differently in order to best address the developing concerns and use of teachers within the school.

Other players in implementation research represent those who have been steady contributors, such as Mathew Miles and Bill Firestone. Some have focused more on policy, such as Karen Seashore Lewis and David Clark. Occasionally each of these have been drawn into examination of implementation issues. Throughout this two decade look at implementation, Fullan (1982) has served in a similar role that Barak Rosenshine served for the process-product classroom

researchers. Rosenshine was often referred to as the "great collator", who brought together the different studies, identified trends and patterns that ran across studies, and served as a communicator so that all would be aware of the work of others. Fullan has served this role in the area of implementation research. For example, a review of the literature by Fullan and Pomfret (1977) became a key synthesis reference of the early implementation studies. Another important historial and archivist has been Paul Hood.

There are many others who's research contributions have been important, as we've gradually increased our understandings of the entire change process, and especially the implementation phase. Most of these persons are members of the AERA Special Interest Group on Research Utilization. Their steady contributions over the years have provided the undergirding support and extentions of the major implementation research projects that were summarized above.

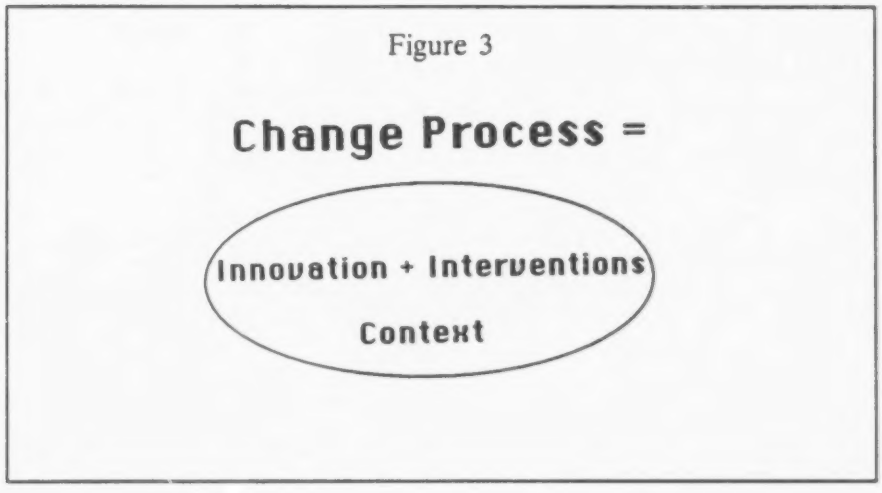
Others have occasionally been drawn into studies of implementation, usually as a result of change process problems they were experiencing in their own fields. For example, Alkin, Daillak & White (1979) focused heavily on issues of "evaluation utilization" in the last half of the 1980's. As evaluators, Alkin and his colleagues discovered that their reports of school evaluations were not being used!! This lead them into extensive discussion and analysis of "utilization" issues.

Also, it has been my experience that almost every developer of an innovation sooner or later, (unfortunately it is usually later rather than sooner) discovers that implementation has to be addressed. Rarely a month goes by that myself, or one of my CBAM colleagues, does not receive the urgent phone call from another innovation developer who is chagrined to discover that not everyone automatically is willing to use his/her innovation. As the rural sociologist pointed out some forty years ago, the two and one half percent of the population that work and behave as "innovators" do not heavily influence the other 97 percent of perspective adopters.

However, this tour of the key implementation studies is meant to be short and only to highlight key themes in the work. One of the themes is the general reluctance to accept implementation as being a reality. One conclusion is that the development of a policy does not lead to change processes in schools and school classrooms without the phenomena of implementation being addressed. Another conclusion is that in the 1970's and 80's there was a thorough recognition and documentation by researchers and theorists of a special phase that we can call implementation. We can conclude that the implementation phase can be assessed, planned for and facilitated. One set of tools that can be applied in the implimentation process is the three diagnostic dimensions of the Concerns Based Adoption Model. They provide ways to monitor and suggestions for facilitating the full change process, of which implementation is one phase.

One way of thinking about these different concepts and components is presented in Figure 3. To understand implementation a distinction must be made between the innovation (the change that is being sought) and interventions (the actions of policy makers and change facilitators to assist teachers in using the innovation). All of this is taking place in the context of the user system, which includes the classroom, the school, the school district and perhaps the state. In order for

Figure 3



a change process to be successful, interventions must be made in ways that involve the developing Concerns and Levels of Use of each teacher.

Rather than continuing here with an extensive review of the past 20 years of research on implementation, the major goal of this paper is to use the past 20 years of research as a foundation. With this foundation of newly developing understandings, I shall raise a number of emerging issues, offer some suggestions for directions for research, and propose how I think policy and implementation practice should be done in the 1990's. First a discussion of a number of issues and trends.

Implementation Issues and Implications for the 1990's

Although there are many issues that could be raised, the items presented here are based in the research findings of the last 20 years. Many of these points, if acknowledge, would help increase the success of change efforts today. For several points I am tempted to offer an "I told you so", however, I will restrain myself. There is much that we have learned from the accumulation of policies, the intense experiences of implementation, and the research that has been done during the last two decades. We should have seen more application of these insights, but many of the mistakes are being repeated. The items presented here are in no particular order, but each has direct implications for how we should go about the change process during the 1990's.

1. <u>There is a Tremendous Need to Have a Clearer and Deeper Understanding of the Concept of an Innovation</u>.

When we began our research around the Concerns Based Adoption Model some 20 years ago, we were amazed to discover that little attention had been given to defining concepts in the earlier research on change. For example, in one classic book on change, the term "adoption" was regularly used with multiple implicit definitions (i.e. as a decision point and as a phase). The

concept of interventions is not mentioned. This lack of definition of concepts has added to the confusion and preserved many misunderstandings about the change process. The concept of innovation has been no exception.

In the CBAM model, the concept of innovation has been defined operationally (Hall & Loucks, 1977; Heck, Stieglebauer, Hall & Loucks, 1981). In this approach the innovation is defined in terms of key operational components and distinctions are made between the different variations that can occur for each component. For example, one component of an innovation could be the grouping of students. This component could vary from the teaching of the whole group, to three smaller groups, to individual work. We develop Configuration Component Checklists for each innovation and use these to document behaviorally how an innovation has been implemented in each classroom.

This approach is in sharp contrast to the definition of an innovation that was proposed some years ago by Horst and Treadway. They suggested that an innovation should be defined in terms of the function(s) that the innovation is to achieve. From their perspective, it would not matter operationally which "configuration" of an innovation was being implemented as long as the function of the innovation was being attained.

Today there is no clear agreement about the underlying definition and elements that comprise an innovation. Thus, without a taxonomy or categorization of this type, many different "changes" are being implemented and the inheritantly different experiences and effects that these different types and categories of innovations accrue are not being distinguished. For example, one current innovation in the U.S. is "restructuring", another is "Site-Based Decision Making", (Hall & Galluzzo, 1991). In both cases, what is being done in different schools and school districts under these labels is amazingly different. I suspect that this lack of clear definition is a contributor to the uncertainty and confusion that so often is observed around the change process.

Two other levels of distinction about an innovation have been proposed in the literature and need further thought as we move into the 1990's. One was proposed in relation to the CBAM work, that is the concept of an Innovation Bundle. Instead of implementing one innovation, a number of distinct innovations are packaged as one. A name is given to the set, such as mastery teaching, choice, or middle school, and the implementation effort addresses the Innovation Bundle as a whole, rather than attending to each innovation in the set. Currently, Innovation Bundles is the nominal approach to change in North American schools. Rarely is a single innovation implemented, instead a bundle of loosely defined innovations is being implemented.

By way of contrast, the concept of Large Scale Innovations has been proposed by van den Burg and Vandenberghe (1983). In Belgium and The Netherlands a different approach to change in schools has been the norm. Rather than many single innovations and relatively small innovation bundles being disseminated in a short period of time, in these European countries national policy efforts are directed towards the creation of large scale change in schools. Along with the expectations of large scale change comes a structuring of the entire educational system to support the change effort. These large scale innovations tend to be "big" and require all to make changes from what they are currently doing. Further there is a five- to ten-year commitment on the part of the policy level to support the implementation of these innovations. Special roles are created and supported for external facilitators, and there is an expectation of on-going support to facilitate sites as they implement the changes. This is in sharp contrast to the one- to two-year more event oriented perspective of change efforts in the U.S.

I will return to this issue of definition of the innovation in my summary discussion. At this point the issue is that definition is important in terms of theory as well as in terms of operation. For most change efforts, this lack of definition contributes significantly to confusion during implementation and mixed interpretations of change process success. If you don't know what it is

that is being implemented, then it is relatively easy to make quick judgments about success or failure, and it is nearly impossible to offer empirical confirmation. A related problem with large scale innovations and innovation bundles is that each of the innovations has to be implemented before one can talk about or review the effects of the complete set.

2. Innovation "Stacks" or Hyper-Innovations

In some related work and thought that I have been doing, it appears that another category or type of innovation that may be useful to think about is what I am calling a "hyper-innovation". I thought of this name because these changes are metaphorically similar to hyper-media in computer technology, and the idea of the "stack" of CD disks that can be accessed by CD ROM and interactive video technology. Characteristics of a hyper-innovation stacks include: a large number of innovations, simultaneous adoption, whole user system "improvement", a mix of process and content innovations, etc..

It appears that for a number of different reasons on the U.S. scene, hyper-innovations are being advocated more frequently as some sort of ultimate solution to the problems facing schools. One of the scary parts of many of these initiatives is the lack of clear definition for what a school or school system would look like once the hyper-innovation is in place!?

For example, currently "restructuring" matches the attributes of a hyper-innovation. Attendance at the recently completed annual meeting of the Association of Supervision and Curriculum Development would leave no one in doubt that restructuring is the tool for educational revolution of the year. Yet, it is not clear, at least to me, what restructuring entails. In this hyper-innovation there is talk about site-based decision making, perhaps some different emphasis upon student outcomes such as problem solving, perhaps there is an expectation of cooperative learning for students, perhaps there is some sort of emphasis upon interdisciplinary curriculum, yet it appears that the single teacher with 25 children in a self-contained classroom in the typical school is left

entact. Thus we have the hyper-innovation stack and along with it ambiguities and uncertainties about what changes and effects will be observable at the school and classroom levels. I will return to further comment about hyper-innovations in my summary.

3. Conditions that are Supportive of Implementation

We have learned a great deal about the roles, responsibilities, and actions of those in a position to support teachers and schools as they are involved in implementation. As the innovation or change that is being considered becomes larger and more complex, there is greater need for active support by the principal, from those in the school district, and additional levels beyond the schools district as the innovation approaches large-scale.

As one moves from implementing the type of innovations studied in the DESSI study and by Emrick, Peterson & Agarwala-Rogers, to innovations requiring whole school use, there is greater need for ongoing support. In other words, as one moves away from the NDN-type of innovation, that tends to be adopted by individual teachers, the more critical it is to involve other decision makers and more elaborate change process support systems. For example, the three following conditions are basic to the success of most change efforts:

A. Larger Conceptions

In order for change to be successful, the leadership needs to have an image of the view and understanding of the systemic nature of the change process. Change is not done solely by individuals, and it is certainly not done by each in isolation of others and the larger system. Leadership involved in facilitating the change process must keep in mind the various subsystems and how their interconnectedness will affect the change process as it unfolds.

B. Removal of Rules and Regulations

In the Site-Base Decision Making movement we have observed in district after district where the "top" makes a decision to have Site-Based Decision Making, but removes none of the already existent rules, regulations and policies that are inherent to top down control of the site. It seems ironic that so many districts are advocating Site-Based Decision Making from the superintendents office, while the same controls for budgeting, scheduling the class day and determining the curriculum are in place as were prior to the Site-Based Decision Making initiative. A partial exception to this effort would be that in Dade County where the Assistant Superintendent, who was placed in charge of the effort, had as his basic job description the role of removing district and state rules and regulations that interfered with the schools moves towards Site-Based Decision Making.

C. Site Need for Time

In order to implement an innovation bundle or a large-scale change, a minimum of five to eight years is necessary. For obvious reasons, policy makers are unwilling to launch and support change process initiatives over this extended time period. However, the realities are that it does take this magnitude of time to bring about meaningful change. This is a fact of life and this reality needs to become a cornerstone of all change efforts.

D. Change Facilitator Teams

We know the change facilitator style of the principal is important (r=74). In the Netherlands, Wijlick (1987) has documented the importance of external facilitators. Hall and Hord (1987) have pointed out the importance of the Second Change Facilitator or Consigliere. Now we need to plan and support implementation with an understanding of the Change Facilitator Team. No one actor does it alone, instead the site-based and external facilitators must work as a team. Planning, staff development and on-going support

for the Change Facilitator Team is a major key to school and classroom implementation success.

4. What and How?

We are at a time when it is important that we drop the simplistic approaches to system wide change that we have experimented with in the last twenty years. We have tried "top down," "bottom up," "mutual adaptation," and various forms of organized and disorganized anarchy. In all cases, we can provide testimony that there are instances where there has been successful change and instances where there hasn't. At this point, we need to begin to accept and recognize the importance of each of the work groups playing out their essential part.

The "top" has to encourage or mandate "do something." However, the top should not be over prescriptive in doing this. The "bottom" has to assume responsibility for implementation and have the opportunity to define a configuration (that will be implemented). Then all need to understand and accept the goals of the change effort. It is not acceptable to think that one part of the organization can succeed without the participation, ownership, understanding, and full involvement of other parts.

Another key to change process success has become clear in two current studies of school districts involved in implementing large-scale innovations. In each case, the top has set middle-level guiding parameters. The people at the so-called "top" must strive to monitor themselves to not be overly prescriptive. When they define tasks too tightly, teachers and principals are not allowed the flexibility to customize the innovation and change it to fit their specific situations (shades of mutual adaptation). On the other hand, when the top is overly vague and general, teachers and principals are unable to receive sufficient guidance and structure to understand what the change effort is really about.

Some still cling to the belief that "top down" is wrong, however, most of us have experienced at one time or another first hand attempts to bring about and sustain change from the "bottom up." After two to three years the change effort fades and everyone leaves discouraged and disillusioned about the possibilities for successful change. These feelings of futility come about when the top does not provide the ongoing support, encouragement and day-to-day sanctioning that is so essential for change to be successful. There is a critical, necessary and ongoing role for all who are involved in the change process.

Alright, back to the importance of setting middle-level guiding parameters. In one of the districts that I am currently studying, there is a major initiative to create a new type of teacher leadership role. This district, Douglas County, Colorado, has merged the previously established school consultant roles of mentor teacher, TOSA's, curriculum specialist, and gifted and talented coordinators into a new single purpose role. The old functions are to be accomplished in a new way by having a full-time specialist teacher placed in each school (Hall, 1991).

In setting up this effort, the district set the educational and experience qualifications for persons who wished to be building level lead teachers. The district established a pool of persons who met these qualifications. The district then said to each school that the school site needed to identify its needs and its philosophical position before interviewing candidates. The schools then selected the person that the school believed would be right for them. This has turned out to be a very powerful initiative and one of the keys to it's success has been the insight of the district leadership. Setting middle-level guiding parameters, rather than being overly prescriptive or overly vague empowered the school sites. The district didn't say to schools "do whatever you want," nor did it say to schools "here is the person we have selected for you." Instead a middle position was taken, where the district set expectations and guiding limits while leaving it to schools to select a person that would best fit in the perceived needs. It is difficult to develop and maintain this middle

level perspective: however, it appears to me to be essential to having success in a system-wide change.

5. The Innovation is in the Mind of the Beholder

The recent interest in cognitive psychology and the idea of the constructiveness/ interpretivist paradigm has a very interesting set of implications for change research, policy, development and implementation practice. One of these ideas is related to defining the innovation from a constructivist perspective. In this approach, it does not matter what the innovation is or how the innovation is defined operationally, or necessarily what the goals are. Rather, an innovation is defined in terms of the meaning ascribed to it by all the participants in the change process. Based on their past experiences, perceptions of the interventions (e.g., memos, announcements and workshops) that are made, and perceived needs, each teacher, principal, and policy maker (and researcher) will construct his/her own definition of the innovation and its implications. From the constructive paradigm, change success through implementation of policy will be constructed by individuals and groups as they experience the change process.

This is another area where the Stages of Concern (Hall & Hord, 1987) work can be helpful. That participants in the change process go through different Stages of Concern about an innovation has been clearly documented. Another way of saying this is, they construct meaning of the innovation and interpret the innovation differently at different times in the change process. At the beginning they interpret the innovation in terms of their self concerns. The meaning assigned to the innovation is moderated in terms of perceptions of what it means for them personally. As implementation begins, task concerns become more intense. Here the interpretation of the innovation is done more in terms of perceptions of the amount of time, logistics and scheduling challenges that are associated with initial use. Ultimately, if the principal and others do an effective job of change facilitation, the concerns of teachers and others may shift to having more impact

perspectives, where there is an analysis and interpretation of the innovation in terms of its consequences and effects upon students.

The point here is that there is variation in the assignment of meaning and what understanding of the innovation is depending upon where the person is in the change process. During the change process there are developmental shifts in perspective, that have been well documented in the last 20 years of implementation research. It would seem sensible and practical to take these different constructions of meaning into account at the policy level, as well as in future implementations. To continue to naively assume that everyone will see the innovation the same way and at the same time will continue to be wasteful and debilitating.

6. <u>There Needs to be an Acceptance of the Fact that Add-On's Are Resulting in System Overload.</u>

Several years ago in developing a laymans taxonomy of intervention strategies I suggested that one be called the Multiple Adoption Design, or MAD strategy. This strategy is increasingly used around the world. More and more innovations, rules, regulations, policies, and prescriptions are being laid upon teachers, principals, and schools. At the same time, the demographic changes in the student population have increased complexity geometrically. Multiple innovations are being "adopted" at once.

There has been a complete failure of the top, middle, and bottom to accept the fact that new things when added to an already full vessel have little lasting effect. Until we start recognizing that there is a finite amount of things that can be accomplished we are going to continue to have system overload. System overload brings with it a whole new round of symptoms in addition to implementation failure. Symptoms of the MAD strategy include teacher burnout, the horrifying statistic that over 50% of beginning teachers quit within five years, and the failure to be able to identify many strong persons in applicant pools to become the next generation of principals. These

are just a few of the symptoms that are resulting from our continual attempts to pour more into a finite amount of time and space, where very good people are already overworked and overloaded. We need a new type of principle that sets a quota on how much changes should be attempted in one site at one time. Further, when something new is added something old needs to be removed.

7. Time by Itself Does Not Guarantee Implementation Success.

Simply extending the time for implementation is not enough. Two to four years of implementation effort, without the necessary support and indicators of success, will lead to implementation failure, just as now occurs in shorter time intervals. Attention needs to be given to another phase of the change process during the 1990s. That phase is institutionalization. Basically institutionalization is a phase when the change has become a part of the regular routine in terms of practice, organizational rules and procedures, and system support. Institutionalization does not automatically occur just because there is more time with an innovation. Institutionalization though is another one of the change process phenomena that we should spend more time on in the 90's.

8. Researchers Need to Become Users of the Findings of Their Colleagues Research.

In preparing this paper, I read various papers of others and reflected on the last twenty years of research on policy and implementation. Another of my conclusions is that we have not been the best at dissemination of our own research findings or learning from the works of others. We as researchers have an adoption and implementation problem of our own. As we develop new understandings we should link these to understandings of other's research findings. The converse is that we need to become more knowledgable of the works of others. However, it appears that we suffer from the same problem as do researchers in other fields. Once we have reported our study findings, we have less interest in working to share our understandings with others (i.e., policy makers and practitioners). This is a natural tendency, since the effort to share amongst ourselves

is arduous, taking time to share with the thousands of practitioners and others would just pull us away from our primary interests. However, the effect is that we are not as knowledgeable about the work of each other and we are not having the accumulative learnings that we could (i.e., shared constructions).

Suggestions for Research on Implementation in the 1990's

While putting together this set of notes about implications from implementation of research from the last 20 years, I have identified a number of trends and themes that seem promising avenues for study. Here I would like to nominate four areas among the many.

A. Unresearched: One Big Change vs. Many Little Changes.

Although there is a great deal of strongly held opinion, we have little systematic data about the relative merits of launching one major change vs. a steady stream of little changes. Some will argue that little changes are less disrupting and gradually accumulate in effects. Others will argue that nothing gets accomplished or little really changes when you approach change in small steps and that the only way to go is to have large upheavals. Scholars and advocates can be found on both sides of this issue, however, to my knowledge we do not have systematic analyses and study of the comparison.

B. Comparison of Implementation Success of European and U.S. Educational Policy Initiatives

I've already made several references to the difference in approaches to educational change in some European countries, notably The Netherlands and Belgium. To push this a little further, it appears to me that these European countries not only approach their change efforts with a different time perspective (i.e. 8-10 years vs. the U.S. 1-2 years), the design and architecture of the policy initiatives are different. In the U.S., educational policy initiatives tend to be undefined sloganized processes, such as career ladder, longer school year, mainstreaming, testing, choice,

alternative certification, and restructuring. Each of these initiatives offers few descriptions of what could go on in schools, but in general represent open-ended exclamations of processes. They do not provide tangible mechanisms or structures for doing something. I recognize this is a little vague in my description. This is in part due to my own hypothesis generation activity around this in recent months. However, maybe if I offer the European comparison it will help.

The European policy initiatives provide more of an architecture or structure for doing something different in schools. For example, in the Renewed Primary School initiative in Belgium, the change effort entails merging the kindergarten classroom with the primary grade classrooms and the development of a smoother transition from the childs point of view. In this initiative, the schools have had to shift their expectations in curriculum, roles of adults and children. A set of outside change facilitators have been hired and trained to support schools in accomplishing this structural shift. A similiar set of policy statement structure and architecture has been put into place around the MAVO project and the Relatively Autonomous Secondary Schools in The Netherlands. In each of these initiatives the change architecture is described in policy and supports, such as external change facilitators, are prepared and put into place to help school staffs in implementing the new approach.

In contrast, the U.S. policies tend to state an open ended process without putting into place specialized implementation support. The change itself is not clear, implementation is not supported and the systemic connections are not addressed. Factors such as external change facilitators, multi-year perspective, and shifts in other policy, rules and regulations to accommodate the new initiatives are not made.

At any rate, the proposal here is that there is an important area of research that could be initiated to examine and contrast the architecture and design of educational policy in such countries as The Netherlands and Belgium, in contrast to how it is done here in the U.S.. The form of the

policies are strikingly different, which appear to lead to major differences in implementation processes and outcomes.

C. The Change Process Does Not Have to be Slow and Arduous

We need to abandon the implicit assumption/expectation that all teachers, classrooms, and schools will develop as one. We behave as if our expectation is that all the schools in this country will move in a controlled flow, just as spectators do in making the human wave around a football stadium. We should keep in mind, that even with enthusiastic fans, there is an unevenness to the human wave in the football stadium, and often the wave motion is washed out! The same is true with our schools. There are individual differences and individual rates of change, whether we are talking about individual teachers or individual schools. Our change efforts need to take into consideration the individuality of the system. There is no such thing as one uniform massive movement to our schools. There are no indications in history of a tidal wave of change in schools. A combination of policy and implementation research initiatives could be launched to examine more closely how it is that the motion of change in our system of schooling in fact does unfold. This work would be of great help in the shaping of policy, as well as of great assistance to schools as they are involved in the details of implementation.

Summary

In this paper I have offered a number of implications for change and suggested some directions for research. In both sets of lists there is the background of the last twenty years of research on policy and implementation, as well as my own intensive experience in working with a large array of schools in a number of countries. Here I would like to offer a few summary comments and a few summary discussion points.

The basic theme in this summary is that all of us have to work together. All need to develop a holistic view of the system and accept the fact that we are partners in the educational process. Policy makers, researchers, teachers, and administrators all need to work on the same plain. I will say this in a number of different ways, however, that is the theme.

-- The "Status" of Policy Needs to be Balanced With the "Gore" of Implementation.

As Linda Darling-Hammond (1990) has pointed out in a recent article, we have to start reaching across the abyss. In her retrospective, Milburn McLaughlin (1990) offered an olive branch too. We need to share a holistic perspective. We need to view all of us as being partners in the same User System. The playing surface needs to shift from images of verticalness, top/bottom, up/down, and the innuendo of there being something elite about working with policy, and something lowly about working with practitioners. The entire playing surface needs to become a horizontal plain with all of us at the same level.

-- Another Way of Saying This is: There Needs to be Trust.

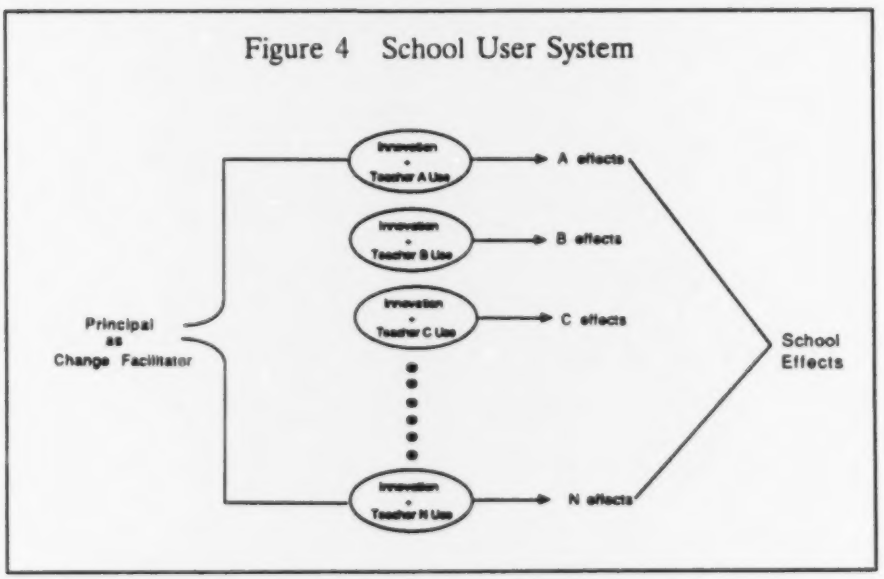
Policy persons have to start understanding the teachers role, then they can trust more. And perhaps, then they will talk to each other and their contract researchers a little less and to practitioners more. Teachers at the same time have to develop a larger world view than their classroom. They need to begin to understand and see their school and community, then they can begin to understand what the expressed concerns of policy makers and others are about. At some point we all have to develop these understandings of the perspectives of the others. In this way the tunnel will become shorter and the degree of understanding of participants at all points along the tunnel will become greater.

-- There Needs to be a More Systemic View of How the Change Process Works.

Change happens in individual classrooms, schools change, so do school districts and states. One of the failures of understanding about implementation twenty years ago was that we did not

accept the reality that a school does not change until each individual teacher within the school successfully implements the innovation. The only way that classroom effects can accumulate to be school effects is if there is use of the innovation in each classroom. One simple picture of this is presented as Figure 4. To look at the school as a whole, first one needs to look at the use of the innovation by each teacher. Each teacher individually can then have an effect. The accumulation of the activities of teachers and their effects aggregate to and compound to become a school effect. Then, of course, as one looks at a district or a state the multiple school and districts effects can accumulate. However, the key building block for all of this is what happens in each classroom. As far away as the individual classroom can be from the policy maker, it is essential for policy makers to do a much better job of understanding how important the other end of the tunnel is and how the world is constructed from the point of view of individual teachers.

Figure 4 School User System



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So How Do We Do This In The 90's?

I realize that at this point I have run through an array of ideas, some of which are more segmented than may be useful. Therefore, in conclusion, I thought it might be worthwhile to list some guiding principles and parameters that I would set for those of us who are involved in trying to bring about change processes in the 1990's. Hopefully, these are done from the horizontal plain perspective, from the holistic systemic perspective, and with the construction of meaning that I have been trying to reflect in this paper. At any rate, here are my recommendations for how we approach it in the 90's:

1. Deregulate - There must be fewer regulations and rules than we have at this time. If we go back to our metaphor of the tunnel and think of each vehicle traveling through that tunnel as representing an innovation, we have a steady stream of traffic. Vehicles are bumper to bumper. At this point the large number of cars, motorcycles, bicycles, hitchhikers, eighteen wheelers and other types of vehicles, including a number of M-1 tanks, are clogging the tunnel. Most of these initiatives are traveling from the policy end of the tunnel towards the practitioner end. The system effect at this time is grid lock. There is such a jam-up of policy initiatives and mandates, rules and regulations, that teachers in classrooms have become immune to and isolated from the outside realities. We must break this traffic jam of innovations. Breaking the jam can only be accomplished by reducing the number of policies, rules and regulations, and adjusting others to be more responsive to school based realities.

2. Shift the Form of Policy - Currently, too many policies are written from the point of view of prescribing a particular practice or mechanism. Some of us have talked about this as setting engineering or design specifications. Policy needs to shift from setting some sort of implementation requirements, such as how long a class period will be, to stating goals or

performance outcomes, such as cooperative problem solving. The mechanism to achieve a desired policy goal is best determined by the professionals in schools, rather prescribing an approach in law. Another alarming part of this issue, as well as a contributor to our traffic jam, is that we are legislating more and more policies that quickly become outdated, as we learn more and more about our business. As experience and research lead to new understandings, the "old" policies remain in place. They are still around two and three decades later, although they may no longer be appropriate for practice.

3. Develop Multi-Variate Approaches - Currently policy initiatives deal with a single variable in isolation of the rest of the system. We live in a multi-variate world. When one thing is changed, that has systemic effects on a number of other things. For example, the lengthening of the class day effects co-curricular activities, the scheduling of buses, the salary of teachers, the schedule for cleaning the classrooms, etc. As we move into the 90's, we need to think more systemically and in multi-variate ways about our approaches to change. The plucking out of single variable solutions in a multi-variate world is naive at best, punitive to practitioners, and most likely harmful to children.

4. Equal Support to Implementation - Historically development received the bulk of the resources, time, and attention. In order for implementation to be successful, there must be a balance in the allocation of resources, time, and attention. Development and implementation must be recognized and supported in terms of what they really require and cost. This will mean, of necessity, that we cannot do as much. However, by now the track record is clear that trying to do everything at once has resulted in little being accomplished. If we shift in the way we think about policy and its importance by acknowledging the criticality of implementation then we will have to develop more systemic ways of

approaching change. When we do, we will be able to think more dramatically and differently about what schools will need to be like for the twenty-first century.

5. Imagine on a Large Scale - At the present time we tend to think in too limited ways about change and improvement of schools. The last decade ended with a so-called Reform Movement. This decade is beginning with a Restructuring Movement. In neither case have we really broken the structures and limitations of our traditional models of schools. In my talks about the restructuring that we have attempted in the Laboratory School at the University of Northern Colorado, I have suggested that "we have kept the worst features of the one room school house." We have kept the self contained classroom, with one teacher, twenty-four kids, chalkboard, four walls, and rows of seats. We have let go multi-age grouping, community involvement, kids teaching kids, etc. As I have observed and analyzed the various "movements" in education I see us continuing to cling to the worst features of the one room school house. In other of my recent writing, I have talked about the difference between "Talking, Tinkering, and Transforming." My point is that too much of our effort in the U.S. emphasizes talking, we are doing very little tinkering and nearly no transforming. During the 1990's it is going to be critical that we stop dabbling and start thinking seriously about different ways of doing schooling. This will require a new level of imagination, as well as thinking in multi-variate ways. We would be well advised to look closely at Van den Berg & Vandenburghe's (1983) concept of Large Scale Innovations.

6. There Needs to be Trust of All by All - This brings me back around to the very important point that I have brought up in several different ways. We have to shift from the vertical to the horizontal playing field. There is a gradual increase in awareness as is reflected in some of the authors that I have cited here that all of us are in it together. We must begin to trust in each other. Practitioners have to trust policy makers and policy makers have to

trust practitioners. It would be nice if both could trust researchers. We are all part of the same system and it is time that we all became players on the same level with the same footing. The last twenty years of research clearly document that when any one of us tries to do it alone little is accomplished.

References

Alkin, M.C., Daillak, R. & White, P. (1979). Using evaluations: Does evaluation make a difference? Newbury Park: Sage Publications.

Datta, L. (1980). Changing times: The study of federal programs supporting educational change and the case for local problem solving. Teachers College Record, 82(1).

Darling-Hammond, L. (1990, Fall) Instructional policy into practice: "The power of the bottom over the top". Educational Evaluation and Policy Analysis, 12(3), pp. 339-347.

Emrick, J.A., & Peterson, S.M. (1978, June). A synthesis of findings across five recent studies in educational dissemination and change. San Francisco: Far West Laboratory.

Emrick, J.A., Peterson, S.M. & Agarwala-Rogers, R. (1977). Evaluation of the national diffusion network, Vol. I & II. Menlo Park, CA: Stanford Research Institute.

Fullan, M. (1982). The meaning of educational change. New York: Teachers College Press, Columbia University.

Fullan, M., Miles, M.B., & Taylor, G. (1981, Frebruary). Organizational development in schools: The state of the art. Washington, DC: National Institute of Education.

Fullan, M. & Pomfret, A. (1977). Research on curriculum and instruction implementation. Review of Educational Research, 4(2), 335-393.

Hall, G.E. & Galluzzo, G.R. (1991). Implementation of building resource teachers: Impressions of the first six months. Report prepared for Douglas County School District, CO.

Hall, G.E. & Galluzzo, G. (1991). Site-based decision making: Changing policy into practice. Prepared for the Policy and Planning Center of the Appalachia Educational Laboratory, Charleston, WV.

Hall, G.E., & Hord, S.M (1987). Change in schools: Facilitating the process. New York: State University of New York Press.

Hall, G.E. & Loucks, S.F. (1978). Innovation configurations: Analyzing the adaptations of innovations (Report No. 3049). Austin: The University of Texas at Austin, Research and Development Center for Teacher Education.

Hall, G.E., Wallace, R.C. Jr. & Dossett, W.A. (1973). A Developmental conceptualization of the adoption process within educational institutions (Report No. 3006). Austin: The University of Texas at Austin, Research and Development Center for Teacher Education. (ERIC Document Reproduction Service No. ED 095 126)

Havelock, R.G. (1971). Planning for innovation through dissemination and utilization of knowledge. Ann Arbor, MI: Institute for Social Research, University of Michigan.

Heck, S., Stiegelbauer, S.M., Hall, G.E. & Loucks, S.F. (1981). Measuring innovation configurations: Procedures and applications (Report No. 3108). Austin: The University of

Texas at Austin, Research and Development Center for Teacher Education. (ERIC Document Reproduction Service No. ED 204 147)

Horst & Tredway

McLaughlin, M. W. (1990, December) The Rand Change Agent Study Revisited: Macro perspectives and micro realities. Educational Researcher, 19(9), pp. 11-16.

Mort, P.R. (1953). Educational adaptability. The School Executive, 71, 1-23.

National Diffusion Network, (NDN), Department of Education. (1980). Educational programs that work. San Francisco: Far West Laboratory of Educational Research.

Rand Change Agent Study--Federal Programs Supporting Educational Change:
Vol. I, Berman, P., & McLaughlin, M.W. (1974, September). A model of educational change. R-158911-HEW.
Vol. II, Berman, P., & Pauly, E.W. (1975a, April). Factors affecting change agent projects. R-158912-HEW.
Vol. III, Greenwood, P.W., Mann, D., & McLaughlin, M.W. (1975b, April). The process of change. R-158913-HEW.
Vol. IV, Berman, P., & McLaughlin, M.W. (1975c, April). The findings in review. R-158914-HEW.
Vol. V, Berman, P., Greenwood, P.W., McLaughlin, M.W., & Pincus, J. (1975, April). Executive summary, R-158915-HEW.
Vol. VI, Summer, G., & Zellman, G. (1977, January). Implementing and sustaining Title VII bilingual projects. Title VII, R-158916-HEW.
Vol. VII, Berman, P., & McLaughlin, M.W. (1977, April). Factors affecting implementation and continuation. R-158917-HEW.
Vol. VIII, Berman, P., & McLaughlin, M.W. (1978, May). Implementing and sustaining innovations. R-158918-HEW.

Rogers, E.M. & Shoemaker, F.F. (1971). Communication of innovations: A cross cultural approach (2nd ed.). New York: Free Press.

Schmuck, R.A. & Miles, M.B. (Eds.) (1971). Organization development in schools. Palo Alto, CA: National Press Books.

Stake, R.E. & Easky, J.A. (1978). Case studies in science education, Vol. I & II. Urbana-Champaign, IL: Center for Instructional Research and Curriculum Evaluation, University of Illinois.

Van den Berg, R. & Vandenberghe, R. (1981). Onderwijsinnovatie in verschuivend perspectief. Amersterdam: Uitgeverij Zwijsen.

Van den Berg, R. & Vandenberghe, R. (1983). Large-scale innovation in education: Two analyses. Leuven, Belgium: Centre for Educational Research and Innovation.

Wijlick, W. van (1987). The activities of internal change facilitators: An analysis of interventions. In R. Vandenberghe & G.E. Hall (Eds.), Research on Internal Change Facilitation in Schools (pp. 99-116). Leuven, Belgium: Acco (Academic Publishing Company).